Chemical Specific Information for Human Milk Pathway

Biological Half-lives

PCBs

(1) Housatonic HHRA – Table 10-14 contains a subset of available data by PCB congener in humans and primates based on serum data. Central tendency data are from 4 studies, three human and one monkey. Half-lives depend on many factors including percent of body fat, and differences in exposure (current vs past), physiology, metabolism and excretion. EPA selected 6 years as a central tendency values. Another study not in the table but also cited shows longer half lives in breastmilk in Swedish women. Total PCBs half life was 14 years; 11- 17 for individual congeners. Dioxin data also cited for comparison.
(http://www.epa.gov/region1/ge/thesite/restofriver/reports/hhra_219190/219190_HHRA_Vol1.pdf see Section 10, page 589 for 200502 Breastmilk Section
http://www.epa.gov/region1/ge/thesite/restofriver/reports/243739.pdf Errata for Breastmilk Section 200601)

(2) ATSDR PCB Tox Profile – In Section 3.4.4.2, several studies on half lives are discussed. On page 330, the Ryan study is cited as one that provides a food estimate of half lives for congners. PCB 180 had the longest t ½ (3.7 to 5.7 years) and PCB 118 had the lowest (1.1 to 1.3 years). Total PCBs ranged from 3.2 to 4.6 years. On page 332, studies by Phillips, et al (1989a) and Taylor and Lawrence (1992) are cited as the best studies on PCB mixtures. The t 1/2were: Aroclor 1242, 2.6 and 1.8 years; Aroclor 1254, 4.8 and 3.3 years; Aroclor 1260, 4.1 (not provided in Phillips).